

## LISTING OF CLAIMS

1-22 (Cancelled).

23. (Currently Amended) A method comprising performing a machine-executed operation involving instructions, wherein the machine-executed operation is at least one of:
- A) sending said instructions over transmission media;
  - B) receiving said instructions over transmission media;
  - C) storing said instructions onto a machine-readable storage medium; and
  - D) executing the instructions;
- wherein said instructions are instructions which, when executed by one or more processors, cause the performance of a frequent itemset operation by performing the steps of:
- dynamically selecting which occurrence counting technique to use from a plurality of available occurrence counting techniques by performing the steps of:
- generating cost estimates for each of the plurality of available occurrence counting techniques based on an estimated I/O cost of using the available occurrence counting technique,
- wherein generating cost estimates for each of the plurality of available occurrence counting techniques based on an estimated I/O cost comprises:
- determining a size of a candidate prefix tree;
- determining an amount of memory that can be used for the candidate prefix tree;
- comparing the size of the candidate prefix tree to the amount of memory that can be used to store the candidate prefix tree; and
- generating an I/O cost estimate for a prefix tree technique based, at least in part, on the size of the candidate prefix tree and the amount of memory that can be used to store the candidate prefix tree

and

selecting the occurrence counting technique that has the lowest estimated cost; and

during said frequent itemset operation, using said selected occurrence counting technique to count occurrences of at least one combination to determine whether said at least one combination satisfies frequency criteria associated with said frequent itemset operation.

24. (Previously presented) The method of Claim 23, wherein the selected occurrence counting technique is a prefix tree technique.
25. (Cancelled)
26. (Previously presented) The method of Claim 23, wherein the selected occurrence counting technique is a bitmap intersection technique.
27. (Previously presented) The method of Claim 23, wherein generating cost estimates for each of the plurality of available occurrence counting techniques based on an estimated I/O cost comprises:  
generating an I/O cost estimate for a bitmap intersection technique based, at least in part, on a cost of reading bitmaps for each frequent item.
28. (Previously presented) The method of Claim 23, wherein the plurality of available occurrence counting techniques include a bitmap intersection technique and a prefix tree technique.
29. (Previously presented) The method of Claim 23, wherein execution of said instructions by said one or more processors further causes:  
determining that a particular occurrence counting technique will not be considered during any phase of the frequent itemset operation; and  
performing the frequent itemset operation without performing startup operations for said particular occurrence counting technique.

30-36 (Cancelled).

37. (Currently amended) A method comprising performing a machine-executed operation involving instructions, wherein the machine-executed operation is at least one of:
- A) sending said instructions over transmission media;
  - B) receiving said instructions over transmission media;
  - C) storing said instructions onto a machine-readable storage medium; and
  - D) executing the instructions;
- wherein said instructions are instructions which, when executed by one or more processors, cause the performance of a frequent itemset operation by performing the steps of:
- dynamically selecting which occurrence counting technique to use from a plurality of available occurrence counting techniques based on conditions existing in a computing environment in which the frequent itemset operation is to be performed,
- wherein the conditions include ~~one or more of (a)~~ workload of a computer system ~~executing in which~~ the frequent itemset operation is to be performed, and ~~(b) resources available on said computer system~~ an amount of volatile memory available to store a candidate prefix tree; and
- during said frequent itemset operation, using said selected occurrence counting technique to count occurrences of at least one combination to determine whether said at least one combination satisfies frequency criteria associated with said frequent itemset operation.
38. (Currently amended) The method of Claim 37, wherein:
- the frequent itemset operation is performed in a plurality of phases, wherein each phase is associated with combinations that have a particular number of items;
- the step of dynamically selecting includes dynamically selecting which occurrence counting technique to use for at least one phase of said plurality of phases; and
- the step of using includes using said selected occurrence counting technique to determine whether candidate combinations for said at least one phase satisfy said frequency criteria;

said at least one phase is a phase during which combinations having N items are processed;  
a first occurrence counting technique is selected for said phase of said frequent itemset operation;  
the operation includes dynamically selecting a second occurrence counting technique in the phase of a subsequent frequent itemset operation during which combinations having N items are processed; and  
the first occurrence counting technique is different from said second occurrence counting technique.

39. (Previously presented) The method of Claim 37, wherein execution of said instructions by said one or more processors further causes:  
determining that a particular occurrence counting technique will not be considered during any phase of the frequent itemset operation; and  
performing the frequent itemset operation without performing startup operations for said particular occurrence counting technique.